

**ABSTRACT OF THE DISCLOSURE**

A method and apparatus for monitoring for Red Fail faults in a traffic signal control system. Traffic control signals generated by a traffic control unit are grouped into channels. A parent-child relationship is established between some  
5 channels. When testing for a Red Fail fault, the control signals in both the parent channel and the child channel are examined. A Red Fail fault will occur only if all the control signals examined in both the parent and the child channel are inactive. The control signals examined in the child channel can be limited to the Green and Walk signals; or may include the Yellow signals.